FIG. 11 shows a pair of the recoiling-type protective devices of FIGS. 7 and 8 shown in a compacted condition ready for packaging for shipping and/or storage. They can be compacted further, as desired. This also demonstrates the unique capability of the devices of the present invention to be compactly arranged after manufacture to increase economy of shipping and storage. The protective devices 32, 36 of FIG. 9 would be arranged in their compacted form for shipping and/or storage in a manner similar to that shown in FIG. 11.

While the preferred embodiments of the present invention are described, it is to be understood that these embodiments are given only by way of example, and that they are capable of variation and modification. An example of possible modification would be to have folds 5, 10, 15 and 25 of various different sizes on a single protective device in order to maximize the folding/unfolding, coiling/recoiling (i.e. compaction and extension) of the protective device. Also, the folds or accordian-type portions need not be provided over the complete width of the protective devices of the present invention. They can be provided, if desired, over a central width portion, the outer portions being substantially straight, provided that sufficient folds or re-entrant portions are provided to permit the protective member to be compressed or folded sufficiently that the protective member remains close to the door and door frame, without excessive "blousing".

Furhter modifications are illustrated in FIGS. 12–15, which show top views of modified protective members of the present invention. The protective members are shown on only one side of the door in FIGS. 12–15. It should be clear that they may be provided on both sides of the door, as shown in FIGS. 1–8. The protective members of FIGS. 12-are generally mushroom-shaped in top view, as clearly seen in FIGS. 12–15. Also, the protective devices of FIGS. 12–15 may extend either over the complete height of the door, or only over a part of the height of the door, such as shown, for example, in any of FIGS. 4–6. In FIG. 12, the protective member 40 has two bent re-entrant portions (curved) 41 and 42, and is attached to the door and door frame by flanges 43, 44, preferably by means of an adhesive. In FIG. 13, the protective member 50 is similar to that of FIG. 12, but it has a flat outer portion 51. This device is also connected tc the door and door frame by means of flanges 53, 54, preferably by means of an adhesive. The protective member 60 of FIG. 14 has bent re-entrant folds or angled portions 61, 62, and is also connected to the door and door frame by means of an adhesive at flanges 63, 64. The protective member 70 of FIG. 15 is similar to that of FIG. 14, but the bent re-entrant folds or angled portions 71, 72 have longer, substantially straight portions which are folded against each other over a longer distance. This provides a more compact arrangement than the arrangement of FIG. 14.

In any of FIGS. 12–14, the bent re-entrant portions may be curved portions, folds, angled portions, etc., as desired.

The device of the present invention is preferably fabricated of a flexible plastic sheet-like material (preferably semi-rigid), such as polyethylene. Such materials are relatively flexible, but provide sufficient rigidity and "springiness" to be mounted as shown in the drawings and to provide the desired folding/unfolding and/or recoiling effect. Since the materials are relativelY soft and flexible, a body part, even if caught in a fold or re-entrant portion will not be damaged or hurt.

As stated above, the term "re-entrant" is intended to encompass the folds (such as shown in FIGS. 1–6), recoiling members (such as shown in FIGS. 7–9 and 12–15) and any other type of similar or equivalent member having one or more inwardly directed (i.e., re-entrant) and retractable folds or curved or angled portions, to provide the expansion and compression, folding/unfolding, and/or recoiling effect of the present invention, as described hereinabove.

I claim:

1. A one-piece protective device for preventing injury by shielding body parts from both a front and a rear face gap of a hinged side of a door, the door being hingedly coupled to a door frame means at a hinged side of the door, the protective device comprising:

a one-piece flexible protective sheet-like member selectively mountable to a rear side or a front side of said door and to said door frame means to selectively cover either one of siad front and rear face gaps to form a covered gap;

said protective sheet-like member being made entirely of a resilient, flexible and bendable material and extending in the vertical direction of said covered gap so as to cover at least a substantial portion of the height of said gap corresponding to the vertical extent of said protective sheet-like member;

said protective sheet-like member having a generally mushroom shape in top view, and including a pair of vertically extending bent re-entrant portions on opposite side portions of the sheet-like member and a substantially central portion between said bent re-trant portions, each of said bent re-entrant portions being directed inwardly toward the covered gap, each of said bent re-entrant portions and said substantially central portion extending over the complete height of said protective sheet-like member, one of said inwardly bent re-entrant portions being adjacent the door and the other of said inwardly bent re-entrant portions being adjacent said door frame means;

each of said inwardly bent re-entrant portions including a first gently curved inwardly bent section of said protective sheet-like member which is bent inwardly toward the covered gap and a second gently curved outwardly bent section adjacent said first bent section, said first and second bent sections resiliently and continuously unbending outwardly in a spring-like manner when the door is moved relative to said door frame means to widen the covered gap, thereby always covering the covered gap;

said substantially central portion of said protective sheet-like member blocking said gap and serving as a shield over said gap and preventing pushing in of said substantially central portion into said gap;

said protective sheet-like member further having vertically extending lateral edge portions on opposite outer sides thereof, and adjacent each of said bent re-entrant portions;

means for attaching one of said lateral edge portions of said protective sheet-like member to the door near said gap; and

means for attaching the other of said lateral edge portion of said protective sheet-like member to said door frame means near said gap, with said covered gap interposed between said lateral edge portions of said protective sheet-like member;